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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,793	11/16/2001	Paul Kleinberger	01/22875	7703

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EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/987,793

Applicant(s)

KLEINBERGER ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 32-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on June 23, 2005, which has been entered into the file.
- By this amendment, the applicant has canceled claims 1, 5-16, 21, 23, 25, 26 and 28-29 and has newly added claims 32-40.
- Claims 32-40 remain pending in this application.

### *Response to Amendment*

1. The amendment filed on **June 23, 2005** is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

(1) **the newly added claims 32 and 37** recite the phrase "a barrier ... each transparent element comprises a plurality of *horizontally contiguous pixels* each switched to be transparent and each opaque element comprises a plurality of *horizontally contiguous pixels* each switched to be opaque",

(2) **the newly added claims 32 and 40** recite the phrase "controller is operable to ... by commanding switching of a pixel selected from among a plurality of pixels forming one of the transparent barrier elements from being transparent to being opaque while maintaining transparency of other pixels forming said one of said transparent barrier element",

(3) **the newly added claim 37** recites the phrase "said system is operable to respond to a detected increase in distance of a viewer from said display by reducing the number of horizontally contiguous transparent barrier pixels forming one of said transparent barrier elements",

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(4) **the newly added claims 33** recites the phrase “change in lateral position of a viewer by commanding switching of an opaque pixel adjacent to said one of said transparent barrier elements from being opaque to being transparent”,

(5) **the newly added claim 34** recites the phrase “change in lateral position of a viewer by switching from transparent mode to opaque mode selected pixels from a plurality of said transparent barrier elements while maintaining transparency of other pixels forming each of said plurality of transparent barrier elements”

(6) **the newly added claim 35** recites the phrase “said controller is further operable to ... detect change in lateral position of a viewer by switching an opaque pixel adjacent to each of a plurality of said transparent barrier elements from being opaque to being transparent”

(7). **The newly added claims 36 and 38** recites the phrase “said controller is further operable ... increase in distance ... by reducing the number of horizontally contiguous transparent (or barrier as in claim 38) barrier pixels forming at least one of said transparent barrier elements”

(8) **the newly added claim 39** recites the phrase “detected decrease in distance of a viewer from said display by increasing the number of contiguous barrier pixels forming a plurality of said transparent elements”.

The specification simply **fails** to give **positive** teachings and support for the “horizontal contiguous **pixels**”, the switching of a single pixel and increasing or reducing number of pixels in the barrier elements to achieve the functions stated above. The specification needs to give **POSITIVE** and **EXPLICIT** support for such. There is no such explicit and positive support for any of these features.

**Applicant is required to cancel the new matter in the reply to this Office Action.**

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 32-40 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejections based on the newly added matters are set forth in the paragraphs above.

#### ***Claim Objections***

4. **Claims 32-40 are objected to because of the following informalities:**

(1). The phrases “barrier”, “transparent barrier elements”, “opaque barrier element”, “transparent element”, “opaque element”, “opaque pixel”, “transparent barrier pixels”, and “barrier pixels” have been used through the claims which are very confusing .

**Appropriate correction is required.**

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Isono et al (PN. 5,315,377) in view of patent issued to Castleberry (PN. 4,873,516).**

Isono et al teaches a *three-dimensional image display device* that is comprised of a *liquid crystal panel* (46, Figures 1-2 and 9), serves as the *display*, for displaying right eye and left eye images in an alternative fashion within a frame and across the display and a *liquid crystal panel* (28), for generating a *parallax barrier*, that serves as the *barrier*, positioned between the display and a viewer, (please see Figures 2). The parallax barrier is generated by a liquid crystal display which implicitly has a plurality of pixels that are switchable to present alternating transparent and opaque barrier elements, (please see the barrier patterns Figures 5-8) such that the left eye image displayed will be visible through the transparent barrier elements for the left eye and will be blocked by the opaque barrier elements for the right eye and the right eye image displayed will be visible to the right eye through the transparent barrier elements for the right eye and will be blocked by the opaque barrier elements for the right eye to enable stereoscopic image display, (please see Figures 1-2, column 4). Isono et al teaches that the parallax barrier displayed on the liquid crystal panel (28, Figure 1) is controlled by a *controller* (22) via *drivers* (24 and 26), wherein the pattern of the transparent and opaque barrier elements formed by switching the pixels are calculated by a *computer* (20) which together with the drivers and controller synchronizes the display of the image and the generation of the parallax barrier, (please see Figure 1 and columns 5-6) to ensure the stereoscopic image display condition being maintained. Isono et al further teaches that a *head position detecting unit* (8, Figure 1) is used to track the position of the observer and the detected signal concerning the movement and the location of the observer is then fed to the computer (20, Figure 1) so that the parallax barrier can be generated to accommodate the movement of the observer, (please see column 11, lines 35-59).

It is implicitly true that the drivers (24 and 26) for driving the liquid crystal panel to generate the parallax barrier involves *switching* the pixels in the liquid crystal panel between a transparent mode and opaque mode. As demonstrated in Figure 11, Isono et al teaches that the barrier panel (28) is essentially consists of a *matrix of light valve pixels* such that each of the pixels is electronically switchable. Isono et

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al also teaches that the parallax barrier can have various patterns (Figures 5-8) which either comprises a *plurality of stripes* that is transparent and a *plurality of stripes* that is opaque with different pitch sizes or comprises of *checker-board* arrangement of transparent and opaque barrier elements, (Figure 8). This means that the transparent barrier regions or elements and the opaque barrier regions or elements are generally and implicitly formed by a *plurality of horizontally contiguous* pixels that is switched to be either transparent or opaque. This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the barrier comprises a plurality of pixels that are *individually* switchable to be transparent or opaque. However it is known in the art that a liquid crystal display panel commonly has a *matrix of pixels* that **each** pixel is individually switchable, as explicitly taught by **Castleberry**. Castleberry teaches explicitly that each pixel of the liquid crystal display panel is designed to have *its own semiconductor switch* such that *each individual pixel* can be turned on or off by the switch, (please see column 1, lines 45-57). It would then have been obvious to one skilled in the art to apply the teachings of **Castleberry** to use a liquid crystal panel having its pixels that are individually switchable to generate the parallax barrier of Isono et al for the benefit of making the generation of parallax barrier with transparent or opaque barrier elements having different sizes and shapes to suite for different application requirements with more ease, freedom and more accuracy.

With regard to the features concerning the switching the pixel between transparent and opaque states to change the barrier pattern in response to the detected position of the observer and the feature concerning increasing or reducing the number of pixels being transparent or opaque as recited in claims 33-35 and 37-40, these features are rejected under 35 USC 112, first paragraph, for the reasons stated above. Isono et al teaches that the positions and the pitch size of the barrier stripes can be adjusted by the computer and the driver. The *size* of the transparent stripe is “B” is determined by the pixel size of the *display device* and the *distance* between the image display and barrier panel (D) and the *distance* between the *observer* and the image display (C), (please see column 9), this means that the size “B” is a *variable*

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and should be *adjusted* when the abovementioned distances are changed, (including distance between observer and the display being increased or decreased). This *implicitly* means that in order for the parallax barrier to have *different size or different value of B, for the* transparent pixel stripe, different *number* of switchable pixels to generate the transparent and opaque barrier regions is used. In Figure 2, Isono et al also teaches the proper relationship between the locations of the transparent and opaque barrier elements in relating to the observer's lateral position for enabling stereoscopic viewing. Isono et al teaches that if the lateral movement of the observer exceeds the distance between the eye, the barrier will just shifted in position in *opposite mode* to accommodate the right eye in the original left eye position. This means if the observer's position is moved laterally, the location of the transparent and opaque barrier regions needed to be changed accordingly so that the proper stereoscopic image display condition is maintained. It is implicitly true that the location of the transparent and opaque barrier regions are adjusted by switching pixel in the transparent regions to opaque state and to switch the pixel in the opaque regions to transparent state, (i.e. the opposite mode as taught by Isono et al).

### ***Response to Arguments***

7. Applicant's arguments with respect to **newly submitted claims 32-40** have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments concerning the newly added claims have been fully addressed in the paragraphs above.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Audrey Y. Chang, Ph.D.*  
*Primary Examiner*  
*Art Unit 2872*



A. Chang, Ph.D.